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Memorandum for Holders
USIB-D-71.6/7
30 September 1971

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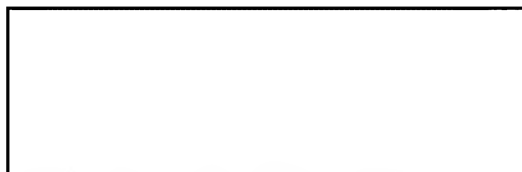
MEMORANDUM FOR HOLDERS OF USIB-D-71.6/7

SUBJECT   :   Fourth Annual Report of the Intelligence
                         Information Handling Committee

REFERENCE   :   USIB-D-71.6/7, 9 August 1971

     Annex B (Education and Training) of the Fourth Annual
Report of the Intelligence Information Handling Committee (IHC) is
circulated herewith to all holders of the reference document. This
Annex supplements Chapter VIII, the Education and Training Section
of the subject report.

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     Executive Secretary

Attachment

GROUP I
Excluded from automatic
downgrading and
declassification

CONFIDENTIAL

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                                        Attachment
                                        Memorandum for Holders
                                        USIB-D-71.6/7

                                        ANNEX B
                                        IHC-AR-4
                                        30 September 1971
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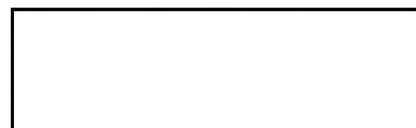
U N I T E D   S T A T E S   I N T E L L I G E N C E   B O A R D

INTELLIGENCE INFORMATION HANDLING COMMITTEE

MEMORANDUM FOR: The United States Intelligence Board

SUBJECT   :   Annex B, Education and Training Report, to the
                     Intelligence Information Handling Committee (IHC)
                     Fourth Annual Report, Fiscal Year 1971

REFERENCE   :   USIB-D-71.6/7, Subject: Fourth Annual Report
                     of the Intelligence Information Handling
                     Committee, 9 August 1971

    Enclosed herewith is the Education and Training Report,
Annex B to the IHC Fourth Annual Report, covering the community
information science training activity for FY-71. This report
supplements Chapter VIII, Education and Training, of Reference
above.

25X1A

Chairman

Att

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                                             GROUP I
                                    Excluded from automatic
                                        downgrading and
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CONFIDENTIAL   declassification

Confidential

USIB
UNITED STATES
INTELLIGENCE
BOARD

Intelligence Information
Handling Committee

EDUCATION AND TRAINING REPORT

(July 1970 - June 1971)

Confidential
Annex B
IHC-AR-4
1 July 1971

ANNEX B
IHC-AR-4
1 July 1971

U N I T E D   S T A T E S   I N T E L L I G E N C E   B O A R D

INTELLIGENCE INFORMATION HANDLING COMMITTEE

Annex B (Education & Training) to the Fourth Annual Report

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A. Introduction

1. Scope

This is the fourth annual Information Science Education and Training Report. It is issued as Annex B to the Fourth Annual Report of the Intelligence Information Handling Committee. This report covers the information science training received by personnel of the intelligence community during Fiscal Year 1971 (FY-71). Some FY-70 statistics are included in this report in order that a comparison can be made with the FY-71 figures. The call for data used in preparing this report was contained in IHC-D-113.5/11 dated 18 June 1971.

2. Explanation of Terms and Content of the Report

The statistical information contained in this report is structured to show courses and students by source, category, and number.

a. Courses

Self-explanatory

b. Students

The statistics show a grouping of the students by four grade levels (clerical, junior, mid-career, and senior) and what percent of the total student grouping is military. The number of students are further shown by classification as user or system personnel as defined below:

(1) User Personnel

Users are defined as all personnel other than operators of information handling systems and support personnel.

- 2 -

This includes executives, supervisors, etc., other than those assigned to intelligence information handling organizations.

      (2) <u>System Personnel</u>

         System personnel are system operators and system support personnel. They include all personnel assigned to or being trained for assignment to an intelligence information handling organization, such as: CIA's Office of Computer Services, Central Reference Service, and other ADP and information handling activities; NSA's Office of Machine Processing; State's Automated Data Processing Division; DIA's Automatic Data Processing Services Division (DS-5); and DoD IDHS elements.

    c. <u>Sources</u>

      The sources are: <u>universities</u>, <u>own agency</u>, <u>other government agencies</u>, and <u>manufacturers, contractors, and professional societies</u>.

    d. <u>Category</u>

      The categories of courses are: <u>general orientation</u>, <u>system analysis and design</u>, <u>computer programming</u>, <u>application</u>, and <u>methods and techniques</u>. (Discussion and examples of these may be found in last year's Education and Training Report, Annex B to IHC-AR-3, dated 1 July 1970.)

    e. <u>Number</u>

      Self-explanatory

B. <u>Statistics</u>

  1. <u>Trends</u>

      A total of 7,048 students from the intelligence community

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participated in information science training during FY-71 as compared
to 6,116 students in FY-70. Chart 1 shows student comparison by
agency for FY-70 and FY-71. The 7,048 students for FY-71 includes
92 full-time university students for whom a distinction between user
and system personnel was not made. Chart 2 shows the total student
enrollment by grade level as well as by user and system personnel
for FY-70 and FY-71. Army did not provide a breakdown between "user"
and "system" personnel. In order to approximate such a breakdown,
Air Force percentage figures were applied to the total figure provided
by Army. CIA did not break down the professional category figures
between "user" and "system" personnel. However, the totals were
broken down so a percentage developed from the total figures was
applied to the professional categories statistics.

2. Courses and Students

a. Summary

A total of 698 information science courses were taken by
members of the intelligence community in FY-71 compared to 660 taken
in FY-70. Chart 3 shows the distribution of students by source and
category and the distribution of courses by source and category for
FY-70 and FY-71. Chart 4 shows the distribution of students by
agency and source for FY-70 and FY-71. Table 1 shows a summary
of courses by source and category for FY-71.

b. Specific Data

Statistical information furnished by members of the intelli-
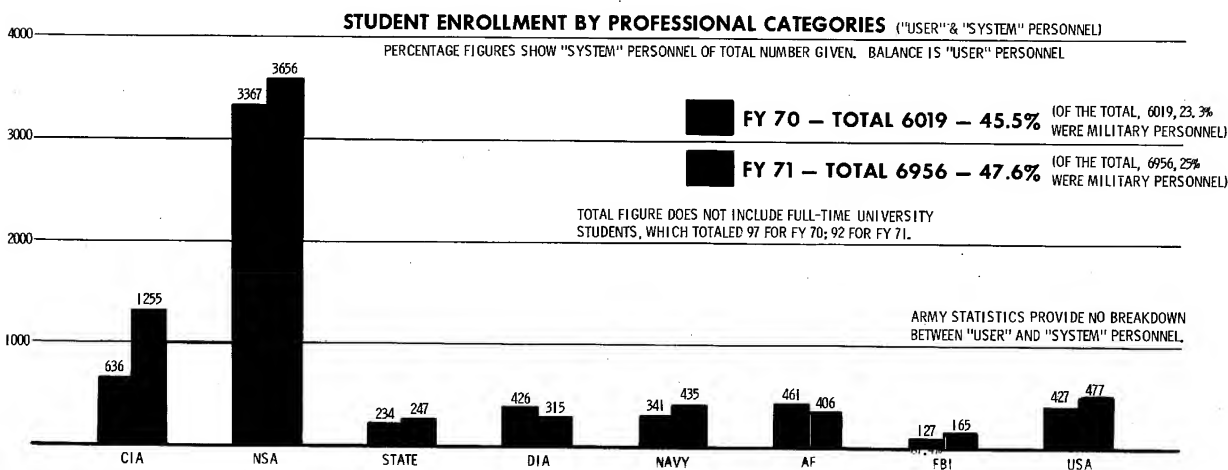gence community has been summarized and presented in the preceding pages.

STUDENT COMPARISON FY 71 WITH FY 70

■ FY 70 — TOTAL 4266

■ FY 71 — TOTAL 5110

TOTAL INDIVIDUALS IS A SMALLER NUMBER THAN TOTAL STUDENT ENROLLMENT BECAUSE SOME
INDIVIDUALS TOOK TWO OR MORE COURSES AND ARE COUNTED AS A STUDENT FOR EACH COURSE.

4000
3000
2000
1000

	CIA	NSA	STATE	DIA	NAVY	AF	FBI	USA
FY 70	509	2605	181	382	314	275	DIDN'T REPORT	DID'NT REPORT
FY 71	887	2657	229	244	409	303	23	358

STUDENT ENROLLMENT BY PROFESSIONAL CATEGORIES ("USER" & "SYSTEM" PERSONNEL)

PERCENTAGE FIGURES SHOW "SYSTEM" PERSONNEL OF TOTAL NUMBER GIVEN. BALANCE IS "USER" PERSONNEL

■ FY 70 — TOTAL 6019 — 45.5% (OF THE TOTAL, 6019, 23.3%
WERE MILITARY PERSONNEL)

■ FY 71 — TOTAL 6956 — 47.6% (OF THE TOTAL, 6956, 25%
WERE MILITARY PERSONNEL)

TOTAL FIGURE DOES NOT INCLUDE FULL-TIME UNIVERSITY
STUDENTS, WHICH TOTALED 97 FOR FY 70; 92 FOR FY 71.

ARMY STATISTICS PROVIDE NO BREAKDOWN
BETWEEN "USER" AND "SYSTEM" PERSONNEL.

4000
3000
2000
1000

	CIA	NSA	STATE	DIA	NAVY	AF	FBI	USA
FY 70	636	3367	234	426	341	461	127	427
FY 71	1255	3656	247	315	435	406	165	477

CHART 1

STUDENT COMPOSITION
BY PROFESSIONAL LEVELS

fiscal year   1970   1971

CLERICAL	MID CAREER
GS 1—6	GS 12—14
E 1—6	03—05
JUNIOR	
GS 7—11	SENIOR
01—2	GS 12 AND UP
E7—9	06 AND UP

USER PERSONNEL

clerical   950   795
junior   1069   1441
mid-career   1047   1215
senior   138   191
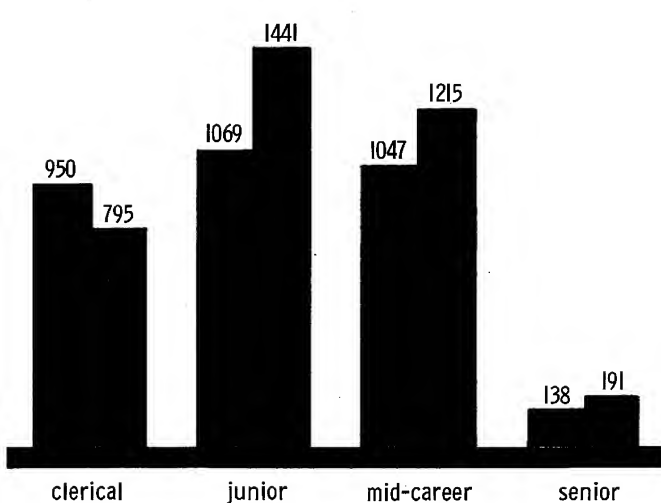
TOTAL 1970   3204
TOTAL 1971   3642

SYSTEM PERSONNEL

clerical   1308   1442
junior   982   1161
mid-career   485   658
senior   40   53

TOTAL 1970   2815
TOTAL 1971   3314

TOTAL USER & SYSTEM PERSONNEL
1970—6019   1971—6956

CHART 2

COURSES AND STUDENTS BY SOURCE AND CATEGORY

TOTAL COURSES FY-70 660

TECHNIQUES III
16
APPLICATION 109
42
COMPUTER PROGRAMMING 170
29
SYSTEM ANALYSIS AND DESIGN 144
46
ORIENTATION 126
43

TOTAL STUDENTS FY-70 6019

METHODS AND TECHNIQUES 758
216
APPLICATION 483
355
23
325
COMPUTER PROGRAMMING 2177
260
SYSTEM ANALYSIS AND DESIGN 716
355
ORIENTATION 1885
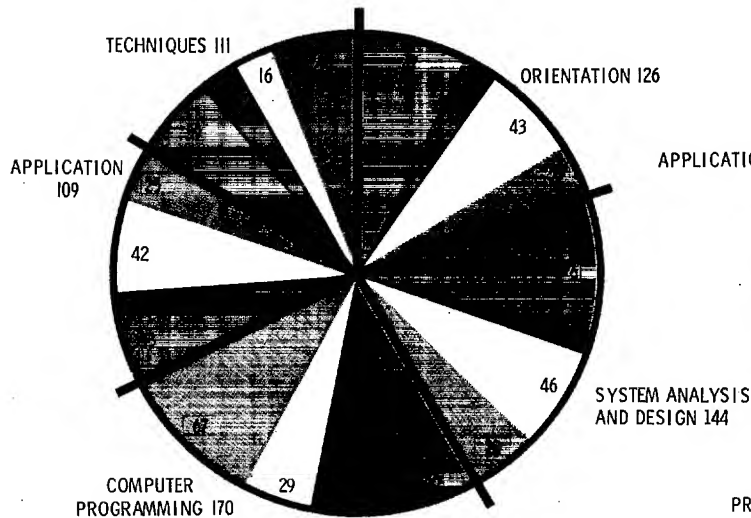
excluding 97 full-time university students
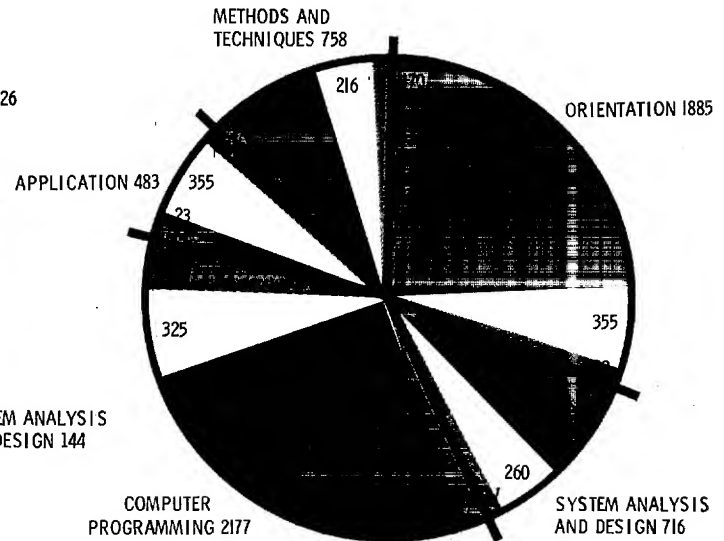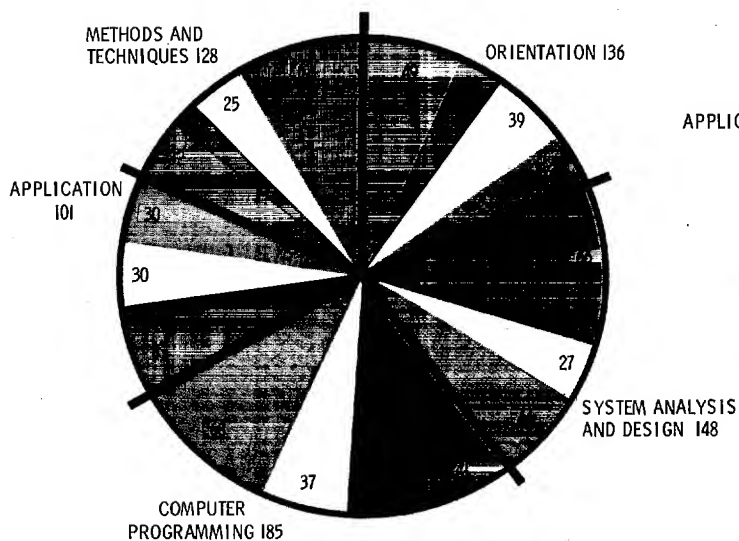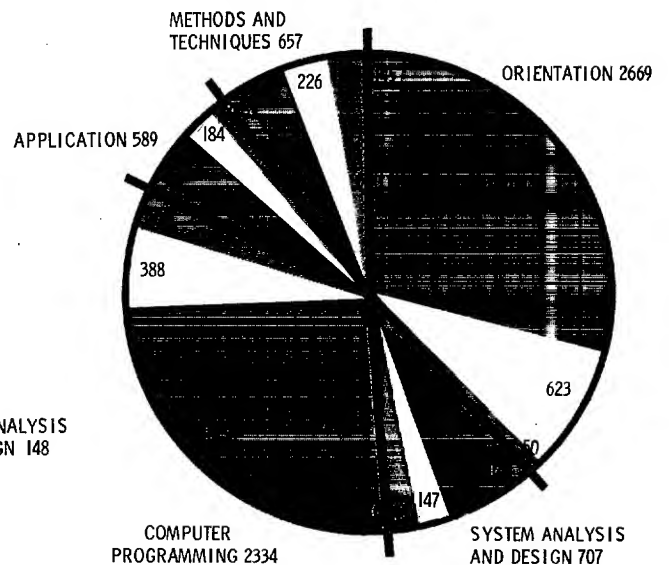
SOURCES OF COURSES

PART TIME UNIVERSITIES

OWN AGENCIES

OTHER AGENCIES

MANUFACTURERS AND CONTRACTORS

TOTAL COURSES FY-71 698

METHODS AND TECHNIQUES 128
25
APPLICATION 101
30
30
COMPUTER PROGRAMMING 185
37
SYSTEM ANALYSIS AND DESIGN 148
27
ORIENTATION 136
39

TOTAL STUDENTS FY-71 6956

METHODS AND TECHNIQUES 657
226
APPLICATION 589
184
388
COMPUTER PROGRAMMING 2334
147
SYSTEM ANALYSIS AND DESIGN 707
623
ORIENTATION 2669

excluding 92 full-time university students

CHART 3

TABLE 1. SUMMARY OF <u>COURSES</u> BY SOURCE AND CATEGORY FOR FY-71

	CIA	NSA	STATE	DIA	ARMY	NAVY	AF	FBI	ALL ORG
Source									
University*	57 / 30%	94 / 40%	14 / 25%	26 / 31%	0	30 / 36%	0	0	221 / 32%
Own Agency	22 / 12%	43 / 18%	2 / 4%	9 / 11%	0	0	0	9 / 69%	85 / 12%
Other Gov't. Agencies	32 / 17%	23 / 10%	23 / 41%	18 / 21%	20 / 100%	24 / 29%	18 / 100%	0	158 / 23%
Manufacturers	79 / 41%	74 / 32%	17 / 30%	31 / 37%	0	29 / 35%	0	4 / 31%	234 / 33%
TOTAL	190 / 100%	234 / 100%	56 / 100%	84 / 100%	20 / 100%	83 / 100%	18 / 100%	13 / 100%	698 / 100%
Category									
Orientation	34 / 18%	47 / 20%	19 / 34%	18 / 21%	1 / 5%	13 / 15%	2 / 11%	2 / 15%	136 / 19%
System	33 / 17%	48 / 21%	19 / 34%	20 / 24%	5 / 25%	20 / 24%	0	3 / 23%	148 / 21%
Programming	48 / 25%	54 / 23%	11 / 20%	27 / 32%	6 / 30%	24 / 30%	9 / 50%	6 / 46%	185 / 27%
Application	25 / 13%	36 / 15%	4 / 7%	11 / 13%	6 / 30%	14 / 17%	4 / 22%	1 / 8%	101 / 14%
Methods & Techniques	50 / 27%	49 / 21%	3 / 5%	8 / 10%	2 / 10%	12 / 14%	3 / 17%	1 / 8%	128 / 18%
TOTAL	190 / 100%	234 / 100%	56 / 100%	84 / 100%	20 / 100%	83 / 100%	18 / 100%	13 / 100%	698 / 100%

* Full-time university students not included.

Specific data on each of the above mentioned categories are available from the IHC Support Staff.

C. Progress in Information Science Education Programs -- Emphasizing Changes

This section contains information on action taken in FY-71 by members of the intelligence community to improve their information science education programs.

1. CIA

The Training Staff of the Office of Computer Services offered 12 new courses in FY-71 on various aspects of computer programming and ADP Orientation. The Office of Economic Research (OER) developed five different courses involving econometric methods. A total of 260 OER students attended these courses in contrast to 65 from that office who attended courses offered outside CIA. Eighty-six Central Reference Service students were provided training by a broad spectrum of courses offered by a number of different sources. The Office of Strategic Research sponsored a two day course on the Arsenal Exchange Model, given by Martin-Marietta Corporation.

2. NSA

a. National Cryptologic School

In FY-71, the National Cryptologic School constructed curricula in all appropriate disciplines. Many of them include courses in computers and their applications to guarantee awareness of the use and possibilities of computers. Three curricula are particularly related to information science.

(1) <u>Computer Science</u> brings together existing courses at all levels to develop professional programmers, data systems analysts, and managers of computer operations. Associated courses in mathematics, operations research, and fields of agency applications are also included.

(2) <u>Computer Operator</u> offers an opportunity for structured growth of para-professionals through a selection from 27 courses in six levels of difficulty and generality.

(3) <u>SIGINT Reporting</u> covers training in research and writing together with background information on military doctrine, area studies, cryptologic disciplines, and computer orientation.

b. <u>Career Development Program</u>

(1) The curricula above relate closely to portions of the NSA Career Development Program. During the year, 124 people were certified as professionals in Data Systems, and 222 as professionals in Special Research. Certification of Computer Operators has not yet been formalized.

(2) The SPECOL language, designed to allow analysts to retrieve information from machinable files, has been taught to NSA analysts who use the language to query about 40 NSA files. Training has also been given outside NSA to people working about 60 other files.

(3) NSA trained 50 Army Security Agency men in computer operations in two 10-week sessions. Graduates qualified as MOS 74E (Computer Operator) and were assigned to NSA and ASA for duty.

3. Department of State

The Department's training program for FY-71 in information

science was concentrated in two areas: (1) in "user" orientation,

largely at the mid-career level, and (2) in on-the-job and manufac-

turers' training of systems personnel in automatic data processing and

computer programming. A one-week course on Quantitative Methodology

in Political Science was given at the Foreign Service Institute (FSI)

in FY-71. At least one more iteration will be presented in FY-72.

Dr. Edwin Fogelman submitted a five-page report on Training in

Quantitative Political Analysis to the FSI in July 1971

4. DIA

a. Information Science Training

During FY-71, DIA sent 10 professionals for a full academic

year and one professional for a half year of study in information

science at various universities. All other training programmed for

the fiscal year was accomplished with the exception of that programmed

for commercial facilities. This training was curtailed due to the

cutback in the budget. No new information science training programs

were initiated in FY-71.

b. Automated Data Base Seminars

A series of eight Automated Data Base Seminars were presented

to 240 employees during FY-71. These seminars introduced the substantive

intelligence user to the DIA Automated Data Bank. A new feature added

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during FY-71 was a presentation on the DIA On-Line System (DIAOLS), its capabilities, components, and use.

5. Army

The number of U.S. Army Intelligence personnel instructed in information science increased slightly during FY-71. However, there was a decrease in the number of Army officers taking full-time university courses in information science (22 in FY-70, 11 in FY-71).

6. Navy

During FY-71, a significant change was achieved in the NIPSSA education and training program. An education and training package was negotiated with CDC in conjunction with the contract for a CDC 6400 system. This provided a well-planned course of instruction in computer science disciplines for NIPSSA systems analysts, programmers, and computer operators. Contracted training totaled 77 instructor weeks, 35 of which were used in FY-71. The balance is scheduled throughout FY-72 and FY-73. A maximum of 16 students can be accommodated in each class and every effort is being made to schedule the full student complement in each session. In those instances where a full student complement is not available due to priority assignments, plans are being made to market the unused spaces to other agencies and activities within the intelligence community.

7. Air Force

The Air Force training of 402 students in information science was provided by the Armed Forces Air Intelligence Training Command (AFAITC), Lowry Air Force Base. Although the Air Force, through the

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Air Training Command, is the executive agent for operating the AFAITC, the courses given there (see paragraph C. 9.) are reported under other government agencies.

8. Information Science Center (ISC)

Since 1 July 1970, the Information Science Center has presented two iterations of the "Functions" course, and one of the "Survey" course to a total of 56 students. The length of the "Survey" course has remained at three weeks and its content basically the same. The "Functions" course, on the other hand went to 11 and then 12 weeks in length with considerable restructuring. Additional detail may be found in IHC-AR-4, dated 1 July 1971.

9. Armed Forces Air Intelligence Training Center (AFAITC)

a. Mission and Program

The Armed Forces Air Intelligence Training Center (AFAITC) provided training for 1026 students in information science. The AFAITC program provides instruction for analysts, programmers, and computer operators on the various data management systems utilized in the IDHS community. During FY-71, these systems included Modular Data Systems (MODS) (formerly Small Scale Formatted File Systems), 1410 Mark III Formatted File System, and the 360 Formatted File System. Additionally, courses for the intelligence analysts (users) are presented to familiarize the analysts with the concepts and capabilities of the various intelligence data handling systems.

b. Mobile Teams

Fourteen courses were offered at the site of the user

organization by the mobile training teams of AFAITC. A total of 1009 students received instruction from the mobile training team effort.

      c. <u>Basic Air Intelligence Training Program</u>

      The utilization of "live" files from the field units has significantly enhanced the course curriculum taught at AFAITC. Introducing the student to the "real-life" environment greatly improves the learning process. Intelligence students are introduced to computer concepts as applied to intelligence functions during the first four blocks of instruction in the revised basic air intelligence course. Classroom instruction and practices are designed to familiarize the students with ADP fundamentals, computer programming techniques, and the various formatted file systems related to IDHS. Subsequent blocks of instruction insure that each student understands and applies automated techniques to simulate actual intelligence activities.

D. <u>Hiring of Experienced Personnel</u>

  1. <u>CIA</u>

      Recent change in the economy, shifts in the job market, and other influences have resulted in a substantial reduction in the hiring of programmers. During FY-71, CIA hired two experienced programmers, two people with degrees in information science, one person with a year or more of experience in information science, and 18 persons who had degrees in other fields requiring computer support.

  2. <u>NSA</u>

      At the same time that it became possible to hire college

graduates trained in computer science, austerity reduced the number that could be hired. Consequently, the intern program in data processing is relying principally on people already on board for its input. Attrition from the data processing components remains about one percent higher than for the Agency as a whole. Two-thirds of those leaving the data processing components were in GG-7 or below, which means a loss of skilled operators. NSA now has a training program for their replacements.

3. Navy

At the close of FY-71, 19 additional programming personnel had been hired. Ten of these newly acquired people had previous experience or training. In many cases past experience or training was not necessarily related to the NIPSSA installed systems, and minor retraining or additional training was required to acquaint them with installed hardware, but no basic computer training was necessary. Few new employees, however, are experienced in JOVIAL which is a NIPSSA standard so they receive training in this language as requirements dictate. NIPSSA has continued to maintain a high personnel retention rate. The turnover rate has been one of the lowest in the area and has allowed NIPSSA to maintain a sizeable staff of trained personnel.

4. Air Force

During FY-71, due to austere economic conditions, IDHS components were extremely selective in hiring experienced personnel at the grade scale authorized.

E. <u>Education and Training Plans for FY-72</u>

    1. <u>CIA</u>

        a. <u>Proposed Training</u>

           The Training Staff, Office of Computer Services (OCS),
proposes to add several courses to their program of instructions
for programmers, analysts, and operators. Emphasis is being placed
on the latter with two new courses for machine operators and operator
trainees. In addition an operations management course will be offered
for the first time. The Office of Economic Research (OER) training
effort will continue at about the FY-71 level, with relatively more
emphasis on methods of information retrieval and on techniques for
estimating the parameters of economic models. During FY-72, the
National Photographic Interpretation Center (NPIC), will place
heavy emphasis on training provided through university courses.

        b. <u>Personnel Programmed for Information Science Training</u>

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    2. <u>NSA</u>

    <u>Proposed Training</u>

        Courses offered by the Information Science Center will be
considered as part of the training of interns in information science
and will also be useful to librarians and documentalists. A course
contemplated for several years will probably be presented for the

first time: Cryptologic Research and Use of Intelligence Sources, projected as 120 hours. Of 26 classes in 18 courses to be offered after hours at NSA in the first half of FY-72, 15 classes and 8 courses are in computer science.

3. Department of State

a. Proposed Training

The Foreign Service Institute (FSI) plans to offer a two-week course (half-day sessions) in Political Analysis which will be given by Consolidated Analysis Center, Inc. (CACI) in May 1972 on a contract basis. This course will train employees on the use of computers in foreign policy with emphasis on simulation and models in international relations. The Quantitative Methodology course offered once last year will again be offered in FY-72. This course is being revised and will be using materials on foreign affairs only instead of political science in general. The Computers and Foreign Affairs course offered four times in FY-71 will again be offered four times in FY-72. FSI has allocated $85,000 for information science training for FY-72.

b. Personnel Programmed for Information Science Training

Full-time university training	3
Part-time university training	50
Own Agency	80
Other Government Agencies	90
Manufacturers, Contractors, and Professional Societies	90

4. <u>DIA</u>

<u>Proposed Training</u>

Full-time university training   5

5. <u>Navy</u>

   a. <u>Proposed Training</u>

   Budget cuts and increased operational requirements have combined to force a drastic reduction in the amount of financial support that NIPSSA can now provide for voluntary after-hours education programs. Consequently this program will be substantially curtailed in FY-72 in favor of Command-sponsored training provided by CDC Corporation. The CDC training of 42 instructor weeks remaining in FY-72 and FY-73 equates to 672 student weeks which will offset the loss of part-time university training. The requirement to indoctrinate and train other personnel in data processing and associated areas can be met, in most cases, through participation in one of the many programs conducted by the DoD Computer Institute (DODCI), or by taking advantage of no-cost or low-cost training offered by other federal agencies or commercial vendors.

6. <u>Air Force</u>

   a. <u>Proposed Training</u>

   Proposed Air Force training is discussed under AFAITC (see paragraph E. 7.).

   b. <u>Personnel Programmed for Information Science Training</u>

Full-time university training	8
Part-time university training	No Estimate
Other Government Agencies	450

7. Armed Forces Air Intelligence Training Center (AFAITC)

a. Proposed Training

During FY-72 the Air Force, through AFAITC, will train personnel in the DIA-developed Machine Independent Data Management System (MIDMS). AFAITC has developed three courses to support this requirement: MIDMS Concepts/Capabilities - 24 hours; MIDMS Operations/Specifications - 90 hours; and MIDMS Teleprocessing - 30 hours. Training will commence during the third quarter of FY-72. Initial instruction for MIDMS will be presented at the site of the user by the mobile training teams. With the full implementation of MODS and Sentinel Automated Intelligence Display and Exploitation System (AIDES), the Basic Air Intelligence training course will be revised to integrate the use of on-line display stations. Use of these terminals will enable the students to work directly with information required to accomplish practical problem exercises. AFAITC has allocated $1,123,000 for information science training (this budget supports IDHS training for the entire DoD) and $223,000 for the AFIT Graduate Level Information Science Program for Intelligence (this sum is approximate due to the 40 to 50 percent increase in tuition fees levied by civilian education institutions during FY-72).

b. Personnel Programmed for Information Science Training

During FY-72, the following organizations will send personnel to AFAITC for training in Air Intelligence.

Air Force	1096
Navy	600
Air National Guard	124
Air Force Reserve	51
Foreign Governments	8

In addition, 450 Air Force students will be trained in current IDHS

Data Management Systems.

8. COINS Training

Current DIA plans call for training of CONAD personnel (July

1971), NSA personnel (summer of 1971), and FICPAC personnel (fall of

1971), in the use of the COINS System. As other organizations tie

into the COINS network, DIA will provide training as required.

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